

# The Farm Credit Crisis: Will It Hurt the Whole Economy?

*Michael T. Belongia and R. Alton Gilbert*

SOME economists estimate that 5 percent or more of all farms currently in business will go into bankruptcy in 1986, and that one farm in seven will fail within the next four years.<sup>1</sup> A recent study by two agricultural economists estimates that farm lenders may write off as much as \$50 billion in bad farm debt over the next four years, with \$20 billion cited as the "most probable" loss estimate.<sup>2</sup>

Such projections of losses on farm loans may be high. Nevertheless, actual losses to date already have been large enough to cause a substantial increase in the failure rate among agricultural banks. Accounting for 22 percent of bank failures between 1981 and 1983, agricultural banks have made up about two-thirds of all failed banks since July 1984: 62 agricultural banks failed during 1985.<sup>3</sup> Moreover, the Farm Credit System, a group of federally sponsored agencies that lends to farmers, announced this fall that it will need direct assistance from the federal government to stay in operation.<sup>4</sup>

Ordinarily, the failure of some farmers and some farm lenders need not attract more attention than we

currently pay to the thousands of business firms that fail each year.<sup>5</sup> For several reasons, however, the current farm debt situation has attracted special attention. First, projections of large losses concentrated in agriculture have created concern about the economic health of the entire industry. Moreover, the farm credit crisis has developed at a time when loan losses of commercial banks already are relatively high. Finally, the apparent vulnerability of the banking system to the farm credit crisis has increased public concern about the continued viability of many banks that have been heavily committed to agricultural lending.

Some economists further believe that problems in the farm sector will spill over into the rest of the economy, causing slower economic growth and lower employment. One recent study suggested that bank failures resulting from losses on farm loans could cause investors to view investments in all privately issued securities as more risky.<sup>6</sup> Consequently, interest rates on all privately issued securities could rise relative to the interest rates on U.S. Treasury securities, causing a slowing in economic growth. This article discusses reasons for thinking that this effect either will not occur or will be relatively insignificant and/or short-lived.

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<sup>1</sup>Schink and Urbanchuk (1985), Drabenstott and Duncan (1985), and "The Farm Slide" (1985).

<sup>2</sup>Schink and Urbanchuk.

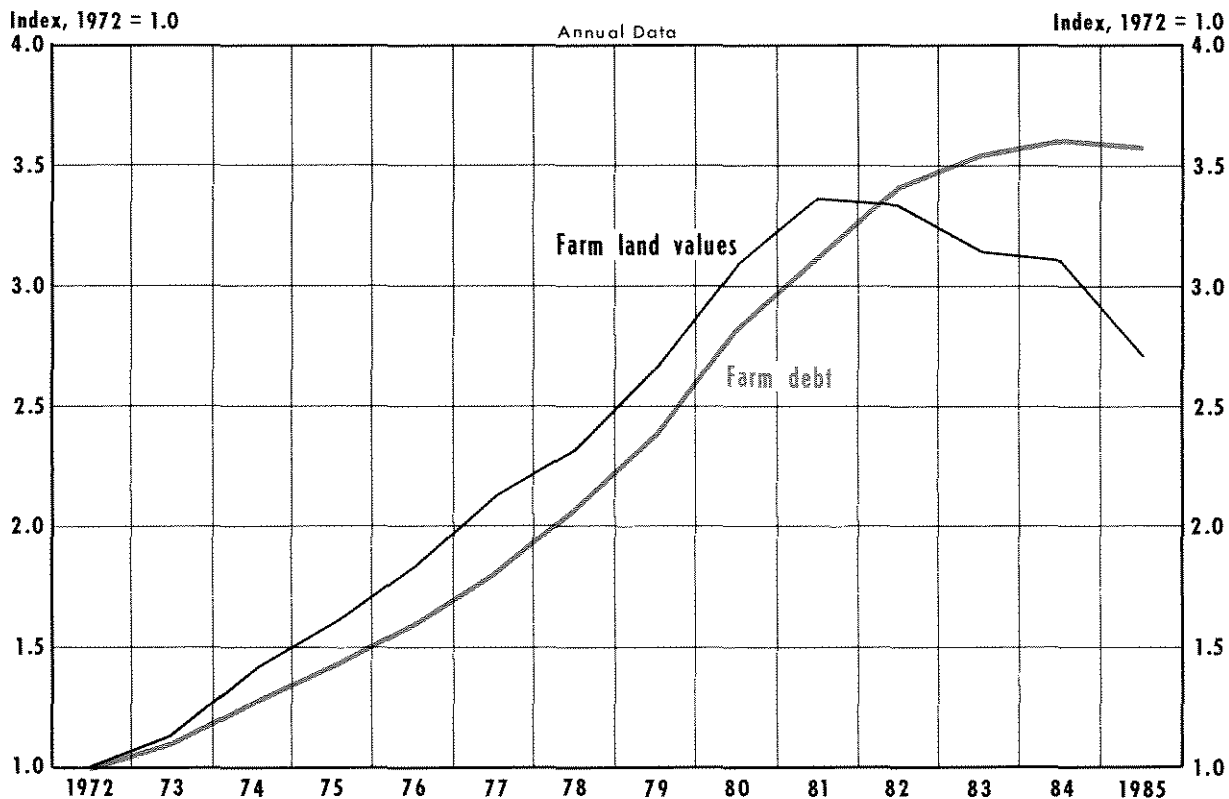
<sup>3</sup>Agricultural banks are identified as those with a ratio of farm loans to total loans above the national average for all commercial banks. This average is currently 17 percent.

<sup>4</sup>Karr and McCoy (1985). For a discussion of the financial condition of farm lenders, see Belongia and Carraro (1985).

<sup>5</sup>From 1979 through 1984, an average of 20,000 business firms failed each year. U.S. Department of Commerce (1985).

<sup>6</sup>Schink and Urbanchuk. In particular, the Wharton study indicates wider spreads between the commercial paper rate and the three-month Treasury bill rate. A related study by Chase Econometrics (1985) deals with the more narrow question of a default by the Farm Credit System on its bonds. Its study shows even more substantial spillover effects, with private debt interest rates rising by 300–400 basis points over rates on government debt.

Chart 1

**Farm Land Values and Farm Debt**

If the failure of large numbers of farms affects both interest rates and general economic activity adversely, then assisting the agricultural sector of the economy may make sense over and above the usual rationale based on the social benefits of maintaining the family farm. The magnitude of federal aid necessary to keep farm lenders viable, however, has been estimated to be in the "multi-billions" of dollars for the Farm Credit System alone. In light of current efforts to reduce the federal budget deficit, it seems prudent to assess the likelihood that the current financial problems of the farm sector will affect the whole economy adversely.

This article analyzes the influences of the current farm credit crisis on the economy in two ways. The first approach examines the performance of financial markets and the economy in recent years. Since the financial trouble of farmers became widespread after the average price of farmland started declining in 1981, we might expect to observe some adverse effects on the economy already. The second approach examines

the effects of the farm financial crisis of the 1920s on the economic activity of that period.

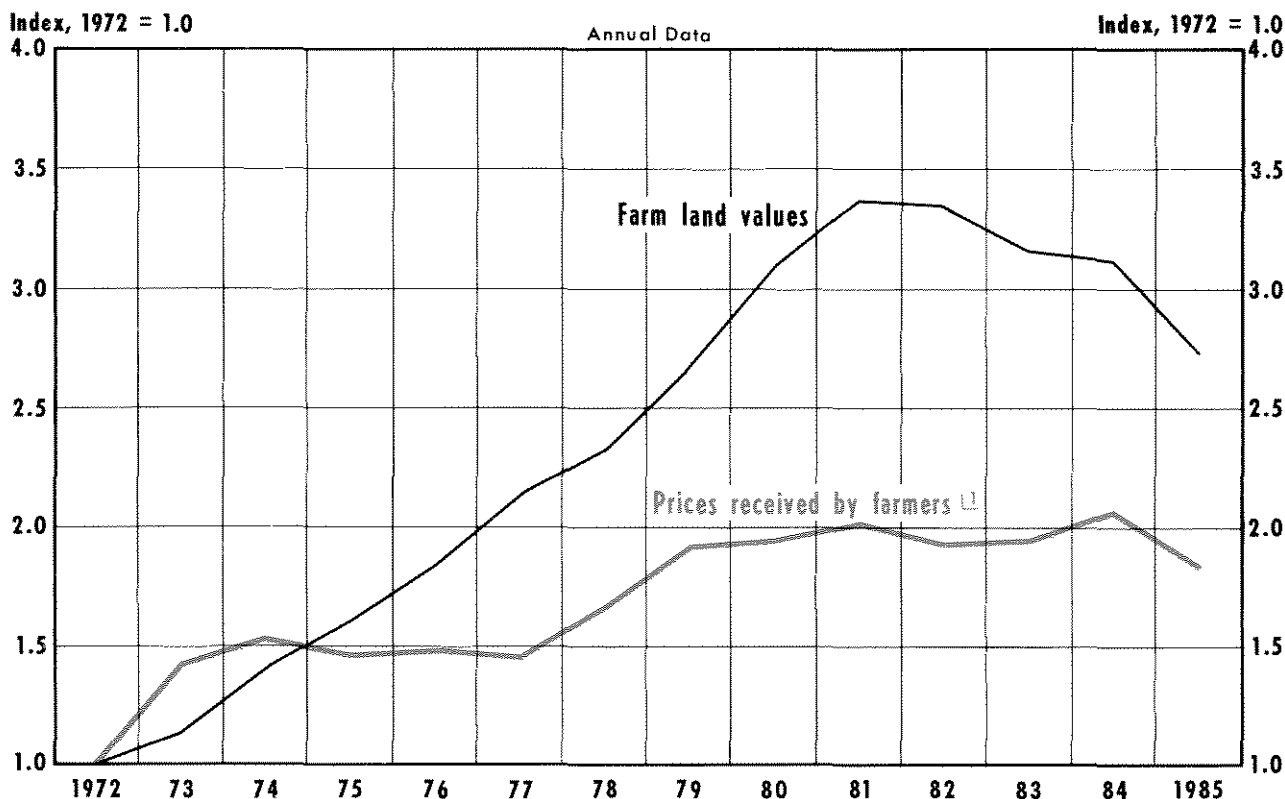
### THE ORIGIN AND EFFECTS OF THE CURRENT FARM CREDIT CRISIS

Today's farm crisis developed as a result of the rapid increases in the prices of farmland in the 1970s through 1981 and the subsequent declines in land prices since then. The 1970s and early 1980s were years of rapid inflation. From 1972 through 1981, the GNP deflator rose at an 8.1 percent average annual rate while the CPI rose at a 9 percent average rate. The price of farmland rose even more rapidly: the average price of an acre of farm real estate rose at a 14.4 percent annual rate from 1972 through 1981.

Chart 1 indicates that total farm debt rose in step with the rise in the prices of farmland. Movements in

<sup>7</sup>Between 1972 and 1981, the price of farmland increased at an average annual rate of 14.4 percent, while, over the same period, total farm debt increased at a 13.5 percent average annual rate.

Chart 2

**Farm Land Values and Prices Received by Farmers**

land prices and farm debt over this period were closely related for two reasons: First, many farmers who bought land while land prices were rising borrowed heavily to finance their purchases. Second, the rising land prices enabled farmers to pledge their land as collateral for general purpose loans.

Unfortunately for farmers, prices of farm commodities did not rise as fast as farmland prices (chart 2). From 1972 through 1981, an index of prices received by farmers on all farm products rose at an 8.1 percent rate, equal to the general inflation rate. Furthermore, most of the rise in the index of farm prices over these years was concentrated in 1973-74 and 1978-79. Prices received by farmers have not risen as rapidly as the GNP deflator since 1979. Thus, during the years of rapid inflation, the price of farmland rose substantially faster than the prices received by farmers for their output.

The general rate of inflation slowed sharply after

1981, making farmland ownership less valuable as an inflation hedge. In addition, the price of farm output relative to nonfarm prices has declined by 1.8 percent since 1981. For many farmers who borrowed heavily during the period of rapid increases in the price of farmland, prices received for farm products have not been high enough to cover their operating expenses and meet their loan payments. Consequently, farm lenders have begun incurring losses on the loans on which farmers have defaulted, and the protection of collateral for farm lenders has been eroded by falling farmland prices.

### *Only A Minority of Farmers Have Financial Problems*

The data in table 1 show that the "farm credit crisis" is concentrated primarily among a minority of the family-size commercial farms, which have annual

Table 1

### Distribution of Family-Size Commercial Farms by Their Ratio of Debt to Assets, January 1985

Nature of financial condition	Ratio of debt to assets	Percentage of farms	Percentage of debt of all family-size commercial farms
Technically insolvent	Over 100%	6.3%	14.5%
Extreme financial problems	70 to 100%	7.4	17.3
Serious financial problems	40 to 70%	20.0	40.3
No apparent financial problems	Under 40%	66.3	27.9

NOTE: Family-size commercial farms are identified as those with annual sales of farm output between \$50,000 and \$500,000.

Source: U.S. Department of Agriculture (1985).

sales of farm output between \$50,000 and \$500,000.\* About two-thirds of the family-size commercial farms have ratios of debt to assets below 40 percent; the USDA considers these farms to have no apparent financial problems. Moreover, these farms account for less than 30 percent of the debt held by medium-size farms. In contrast, about 14 percent of family-size commercial farms have debt-to-assets ratios of 70 percent or higher, and these account for over 30 percent of the debt. In total, about one-third of family-size

\*Farms with less than \$50,000 in annual sales tend to be part-time operations for the farmers; for these farms, there are nonfarm sources of income available to meet the debt payments. In contrast, many of the farms with annual sales over \$500,000 are specialty operations, like cattle feedlots and poultry farms, which have operated profitably with high debt-to-assets ratios for many years. Farms with relatively large annual sales tend to be more profitable than smaller farms.

Only 1 percent of all farms have sales in excess of \$500,000 but they account for more than 60 percent of farm income. In contrast, the group of farms with less than \$40,000 in annual sales actually shows a loss equal to 6.5 percent of farm income.

In comparing farms that sell between \$40,000 and \$500,000 of product annually with those selling more than \$500,000, the larger farms have an income-to-equity ratio of 16.5 and an income-to-debt ratio of 28.6 vs. figures of 3.3 and 11.9, respectively, for the smaller category of commercial-size farms. For more detail on holdings of farm debt by size of farm and alternative estimates of the number of farms in serious financial trouble, see Bullock (1985).

commercial farms hold more than 70 percent of this farm category's debt and have debt-to-assets ratios that indicate some financial stress. It is this minority of farmers — and their lenders — who account for the problem debt.

### *Has the Farm Credit Problem Affected the Economy in Recent Years?*

The spread between the interest rates on commercial paper and Treasury bills — one measure of the spread between interest rates on private and public debt — appears to reflect a risk premium on privately issued debt. Of the years covered in chart 3, the spread was largest from 1980 through 1982, essentially one continuous period of economic recession.<sup>9</sup> This rate spread also widened for a few months around the time of the financial crisis at the Continental Illinois National Bank in May 1984, perhaps reflecting investors' concern about the possible consequences of failure by Continental Illinois.

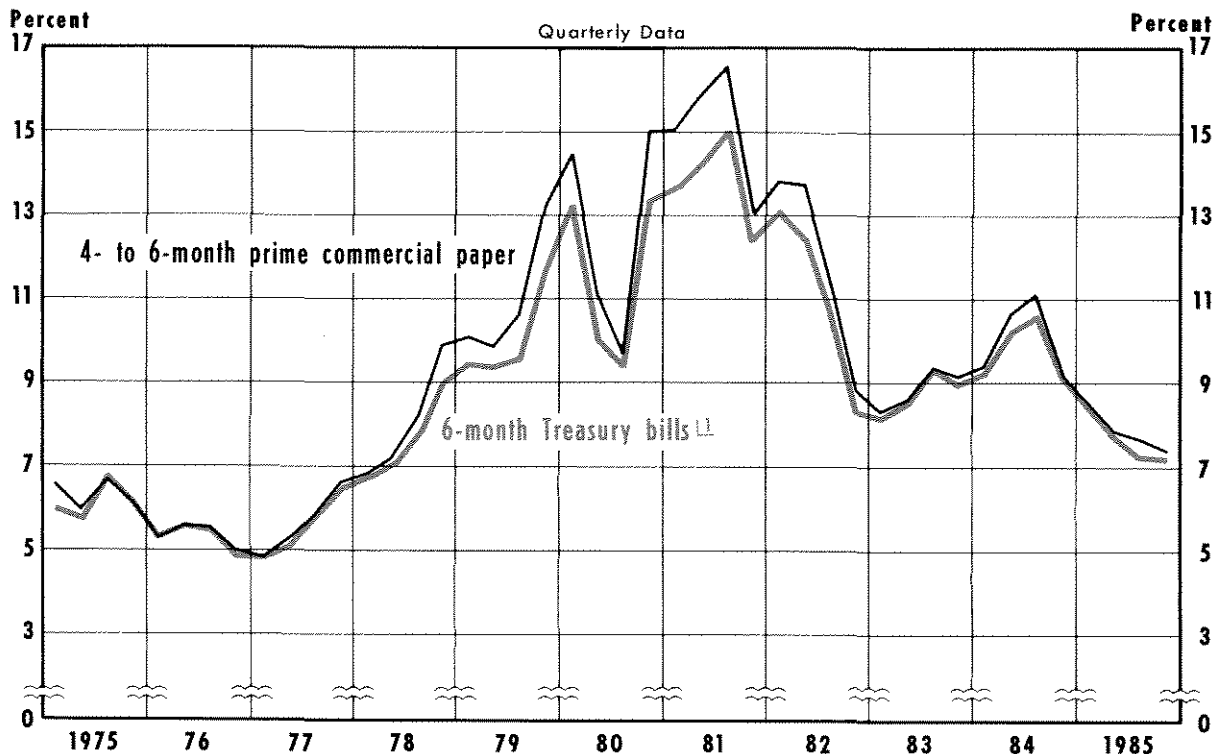
There is little evidence, however, that the growing farm credit crisis since 1981 has had adverse effects on the economy. Real economic activity has been rising since late 1982. Moreover, the spread between the commercial paper rate and the Treasury bill rate generally has *narrowed* following the sharp rise in the failure rate among agricultural banks that began in the second half of 1984 (chart 3). In fact, since mid-1984, the spread between interest rates on private and public debt instruments of similar maturity has been as low as at any period since 1978. Thus, while this rate spread reflects a risk premium, the risk premium does not appear to be significantly correlated with problems in agriculture as suggested by studies warning of a general financial crisis.

### ECONOMIC EFFECTS OF THE FARM FINANCIAL CRISIS IN THE 1920s

Since history frequently repeats itself, we may learn something by looking back to similar problems in an earlier era. The agricultural sector of the U.S. economy experienced a financial crisis during the 1920s that was similar in many respects to farmers' and farm lenders' current financial problems. To make this experience relevant for an analysis of the 1980s, we first

<sup>9</sup>The average spread between 1975 and 1980 was 52 basis points. This widened to an average of 140 basis points between 1980 and 1982. Since the beginning of 1983, the average commercial paper-Treasury bill rate spread has been 40 basis points, with a high of 95 basis points in June 1984 and a low of 7 basis points in July and August 1983.

Chart 3

**Short-Term Interest Rates**

must examine some of the important similarities and differences between the farm crises of the 1920s and 1980s.

### *U.S. Agriculture before World War I*

Agriculture accounted for much larger shares of employment and output in the U.S. economy before World War I than in the 1980s.<sup>10</sup> In 1900, for example, about 41 percent of total employment was in the farm sector. The share of the labor force on farms was declining, falling to just under 30 percent by 1913. In contrast, the farm sector accounted for only 3 percent of civilian employment in 1981, the year of the recent peak in farmland prices.

During the five years ending in 1901, the dollar value of farm output accounted for 23.5 percent of gross

private domestic product. By the five years ending in 1921, that percentage declined to 14.5 percent. In contrast, farm output accounted for about 3 percent of gross private domestic product in 1981. These contrasts suggest that adverse developments in the farm sector should have had larger effects on the economy before World War I than in the 1980s.

The farm sector was the major export sector of the U.S. economy before the war, with farm exports accounting for 65 percent of the dollar value of all U.S. exports in 1901. That share of total exports declined gradually to 46 percent in 1913, but rose again to 48 percent in 1920. In 1981, agricultural products accounted for 18.6 percent of U.S. merchandise exports.

### *The Growing Importance of Credit for Agriculture*

Several developments made the availability of credit more important for farmers by the late 1800s than it

<sup>10</sup>Data used in this discussion are taken from the U.S. Department of Commerce (1975).

Table 2

**Farm Mortgage Debt and Its Distribution Among Lenders: 1910-29**

Year	Total debt (millions of dollars)	Percentage held by				
		Federal Land Banks	Joint- stock land banks	Life insurance companies	Commercial banks	Individuals and others
1910	\$3,207			12.0%	12.7%	75.3%
1913	4,347			12.7	15.5	71.8
1915	4,990			13.4	15.0	71.6
1918	6,536	0.6%	*	14.6	15.4	69.3
1920	8,448	3.5	0.7%	11.5	14.3	70.0
1925	9,912	9.3	4.5	19.6	12.1	54.5
1929	9,756	12.1	6.7	21.9	10.7	48.5

\*Less than 0.1 percent.

Source: U.S. Department of Commerce (1975).

had been earlier in U.S. history. In the early 1800s, homesteaders could obtain land and become farmers relatively cheaply; by the late 1800s, new farmers had to buy land from other landowners. Farming also became more capital-intensive as specialized machinery and buildings made farm operations more efficient.

Prior to World War I, farm mortgage credit was available from commercial banks, life insurance companies, individuals, and others (table 2). The category of "individuals and others," which accounted for 75 percent of farm mortgage credit in 1910, included the farm mortgage loan companies that began operating in the late 1800s. Mortgage loan companies generally were funded by investors in the eastern states. These companies employed agents who worked in farm communities, accepted mortgage loan applications from farmers and transmitted the loan applications to the mortgage companies for approval.<sup>11</sup>

Most farm mortgage loans had maturities of three to five years.<sup>12</sup> Maturities of farm mortgage loans tended to be shortest at commercial banks; about half of these loans had maturities of one year or less.<sup>13</sup> Shorter loan

maturities made farmers more vulnerable to foreclosure by creditors. Although a farmer experiencing temporary financial distress ordinarily might be able to meet the payments on an outstanding mortgage loan, lenders might not renew the mortgage loan if it matured while a farmer was having a financial problem.

Farmers turned their complaints about the terms of credit available to them into an important political issue by the early 1900s. Political initiatives by farmers resulted in the passage of the Federal Farm Loan Act of 1916, which established the Farm Credit Banks under the ownership and supervision of the federal government. That act also facilitated the development of joint-stock land banks, which were privately owned and managed firms that operated under the supervision of the federal government. These two categories of federally supervised lending institutions made most of their farm mortgage loans with maturities of 33 to 35 years.<sup>14</sup> Table 2 indicates that the Federal Land Banks and the joint-stock land banks did not become major farm lenders until the 1920s.

### ***World War I and the Farm Financial Crisis of the 1920s***

The farm financial crisis of the 1920s resulted from the response of the U.S. agricultural sector to the disruption to agricultural production that occurred in Western Europe during World War I. The nations of

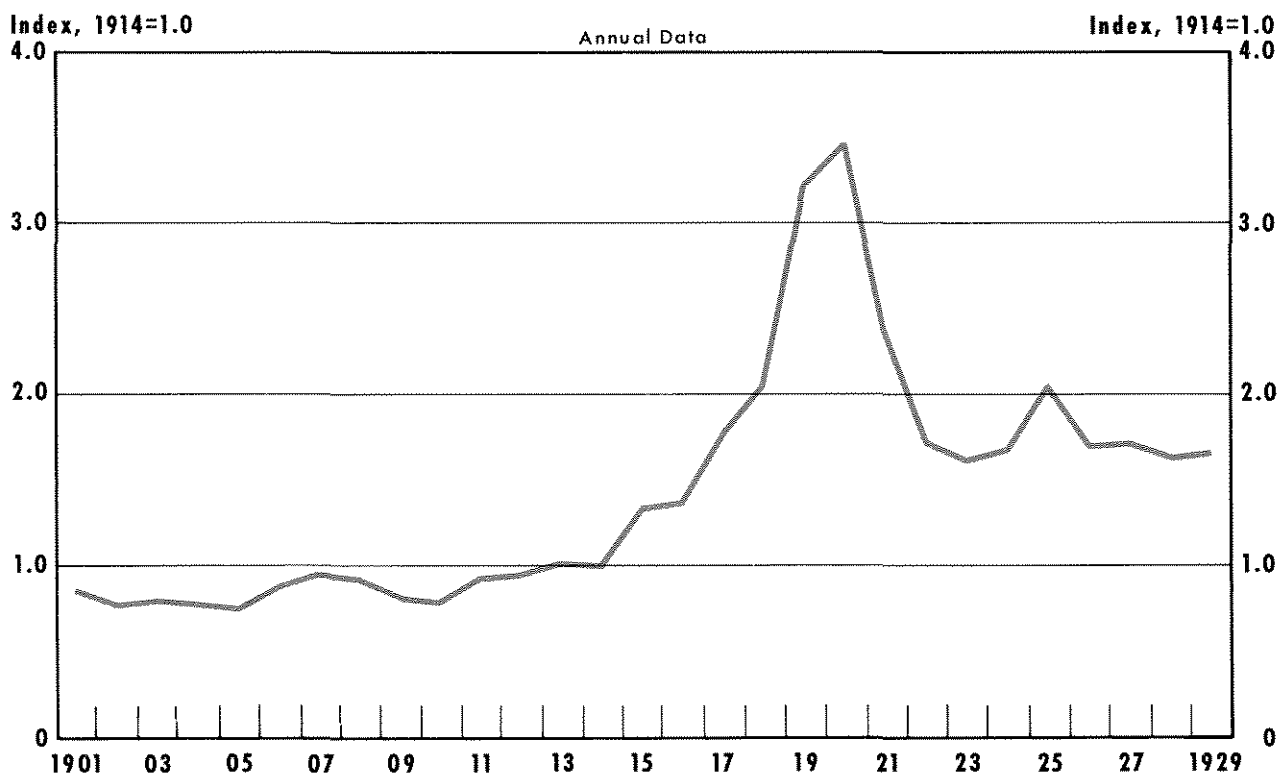
<sup>11</sup>Eichengreen (1984) and Olsen (1925).

<sup>12</sup>Farmers did not like the terms on which mortgage credit was made available to them. They considered the interest rates on farm mortgage loans to be too high. Many farmers also considered the maturity of farm mortgage loans to be too short. See Eichengreen, Higgs (1971), and Stock (1984).

<sup>13</sup>Olsen, pp. 208-19.

<sup>14</sup>Olsen, p. 215.

Chart 4

**Nominal Value of Farm Exports**

Western Europe increased their agricultural imports to replace lost production. This caused the dollar value of U.S. farm exports to rise sharply during the war and shortly thereafter (chart 4). Prices of farm products and farmland rose sharply during these periods in response to the increase in foreign demand for U.S. farm products.

Farmers borrowed substantially during the war to buy land that was rising rapidly in value and to spend more on non-land inputs to expand production. Farm mortgage debt increased from \$4.7 billion on January 1, 1914, to \$10.2 billion on January 1, 1921. Non-real-estate farm loans at commercial banks rose from \$1.6 billion to \$3.9 billion over the same period.

U.S. farm exports declined after the war, as farms in Western Europe resumed production (chart 4). The decline in export demand for U.S. farm products contributed to a reduction in farm prices relative to prices of industrial commodities. This ratio of farm to non-farm prices peaked in 1920, then declined sharply in

1921 (chart 5). The average price of farmland continued to rise through 1920, then declined in each subsequent year through 1928 (chart 6).

Declines in the prices of farm output and the value of farmland drove many farmers into bankruptcy and many agricultural banks into failure. From 1921 to 1929, an average of 635 banks failed per year, compared with an average of 88 bank failures per year over the previous 20 years.

Charts 5 and 6 compare the declines in prices of farm commodities and land in the 1920s with those of the 1980s. These comparisons show declines much more severe than what has been observed so far in the 1980s. First, the relative price of farm output declined more in the 1920s than in the 1980s (chart 5). Second, there were sharper declines in farmland prices, the collateral base for farm debt, after 1920 than after 1981 (chart 6). Other things equal, these declines would have had much greater effects on the ability of farmers to secure new short-term debt or sustain old debt in

Chart 5

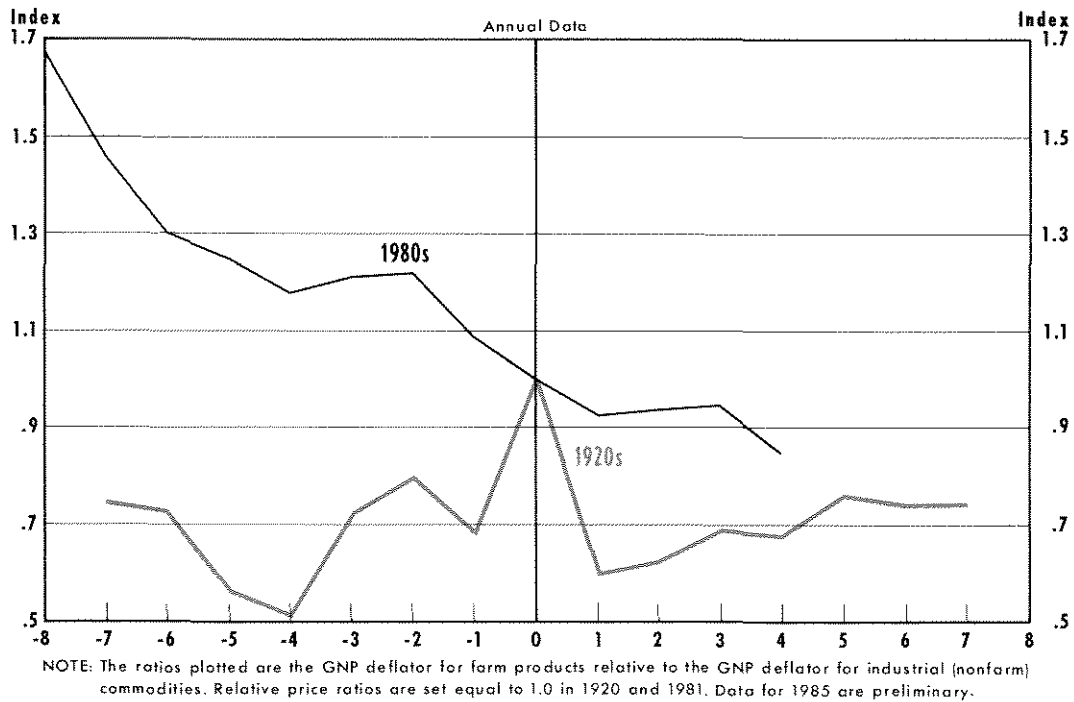
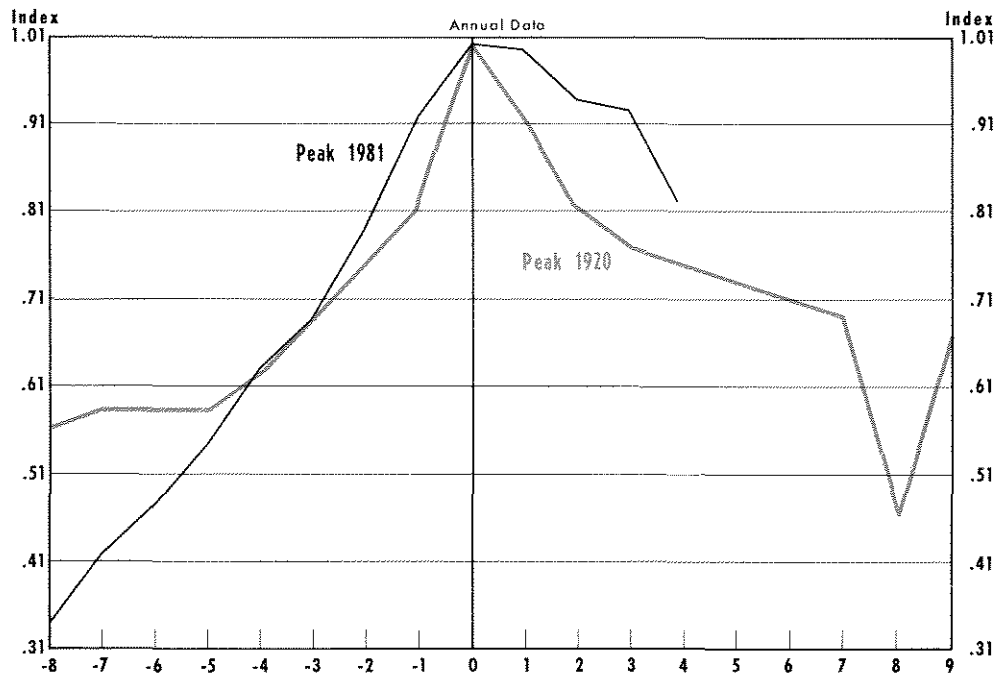
**Trends in Relative Farm Prices in the 1920s and 1980s**

Chart 6

**Prices of Farm Real Estate per Acre Relative to Peak Prices in 1920 and 1981**



the 1920s. Finally, with shorter maturities on most of the farm mortgage credit in the 1920s, the declines in farm prices and land values made farmers more vulnerable to foreclosure than now.

### *Economic Adjustments to the Farm Financial Crisis of the 1920s: Implications for the 1980s?*

As noted previously, agriculture's larger share of total output in the 1920s implies that problems in the farm sector would have had larger adverse effects on GNP and employment in the 1920s than in the 1980s. Yet the 1920s were years of general economic prosperity. Real GNP rose at a 4.2 percent annual rate from 1920 through 1929, up from an average of 3 percent annual growth over the prior 20 years. The number of persons employed grew at a 1.8 percent rate from 1920 through 1929, about the same rate as over the prior 20 years. Although general economic growth might have been even stronger without agriculture's problems, the actual economic performance certainly meets or exceeds most historical norms.

Declines in the prices of farm output and farmland in the 1920s also had relatively small effects on economic activity in the farm sector. Although farm output fell sharply in 1921, the index of overall farm output had regained its previous peak by 1925. Farm output rose at a 1.4 percent annual rate from 1925 through 1929, while real GNP rose at a 3.2 percent rate. Total employment in the farm sector essentially was unchanged in the 1920s; the growth of employment occurred in the nonfarm sector.

How could such a severe deflation in the farm sector, with widespread farm bankruptcies, have such small effects on farm output? The answer involves the process of bankruptcy in our capitalistic economic system. When farmers go bankrupt, their land and equipment do not go out of production; these resources instead are sold to other farmers at reduced prices. It is the lower prices that make it profitable for other farmers to buy the land and equipment even though prices for farm output are lower. Thus, through the process of bankruptcy, farm assets are repriced to levels low enough to make their continued use profitable for farmers.

Finally, if higher bank failure rates cause an increase in risk premiums on privately issued debt, this effect also should have been stronger in the 1920s than in the 1980s, especially since federal deposit insurance did not exist then. Despite the large number of bank failures during the 1920s, however, the spread be-

tween the commercial paper rate and the yield on short-term Treasury securities did not widen during that decade (chart 7).<sup>15</sup> Thus, the financial distress in the agricultural sector of the economy did not seem to produce an increase in risk premiums on privately issued debt.

### *Individual Bank Failures vs. the Liquidity of the Banking System*

The primary reason that the bank failures had such little influence on overall economic activity in the 1920s was that the money supply grew fast enough to support growth in economic activity and to forestall liquidity problems in the banking system as a whole. Deposits in the many failed banks were simply transferred to solvent banks, with no overall reduction in the money stock. Because the quantity of money is closely related to aggregate spending and economic activity, the growth in the money stock facilitated growth in overall economic activity (chart 8). Although the money supply dropped sharply in 1921, during a recession after World War I, M1 (demand deposits plus currency) rose at about a 3 percent annual rate from June 1921 through June 1929. This increase facilitated the economic growth that occurred over that period, in sharp contrast to the beginning of the Great Depression (1930–33), which saw the money stock decline at an 11 percent annual rate (chart 8).<sup>16</sup>

## CONCLUSIONS

Many farmers with high ratios of debt to assets will go bankrupt unless they receive large government subsidies. Some economists have warned that rising farm bankruptcies will cause the failure of many farm banks and possibly the Farm Credit System. Others even have suggested that farm loan losses are likely to produce a genuine financial crisis unless federal aid is provided.

The evidence presented in this article does not support the argument that the farm financial crisis will adversely affect the entire economy. The financial problems of many farmers have become serious since 1981 primarily because the average price of farmland has declined. The financial problems of farmers, however, have not increased the relative interest rates on

<sup>15</sup>The average spread in the 1920s was 127 basis points. The lowest and highest average spreads were 73 basis points in 1928 and 231 basis points in 1920.

<sup>16</sup>For a detailed analysis of how declines in the money stock were related to the Great Depression, see Friedman and Schwartz (1963).

Chart 7

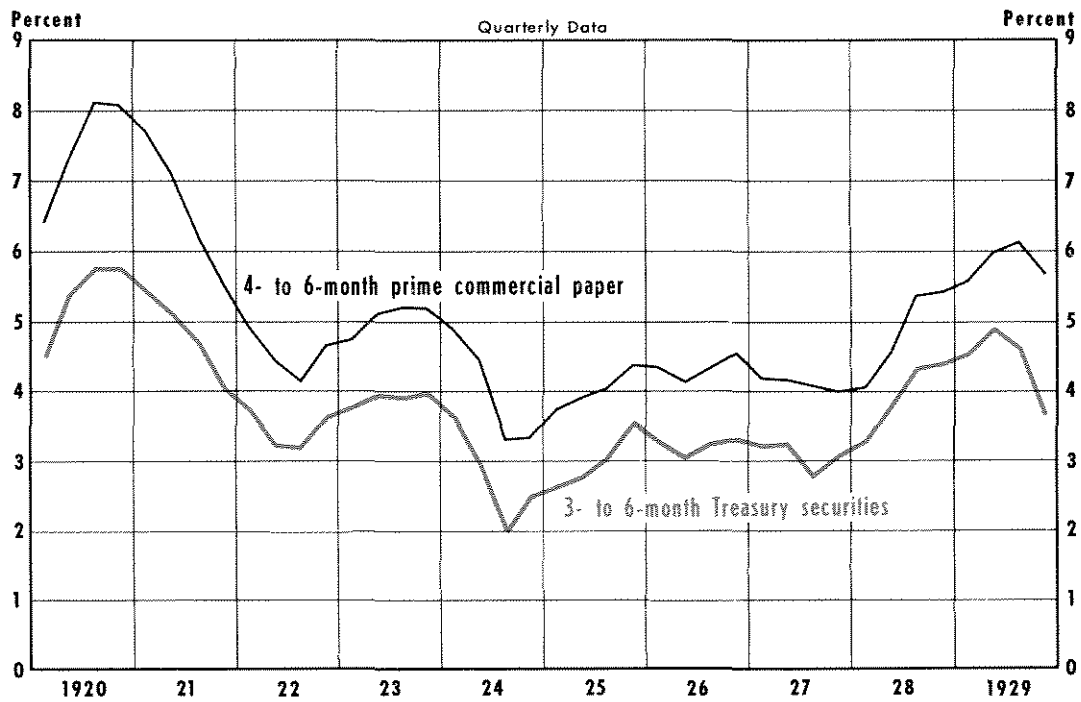
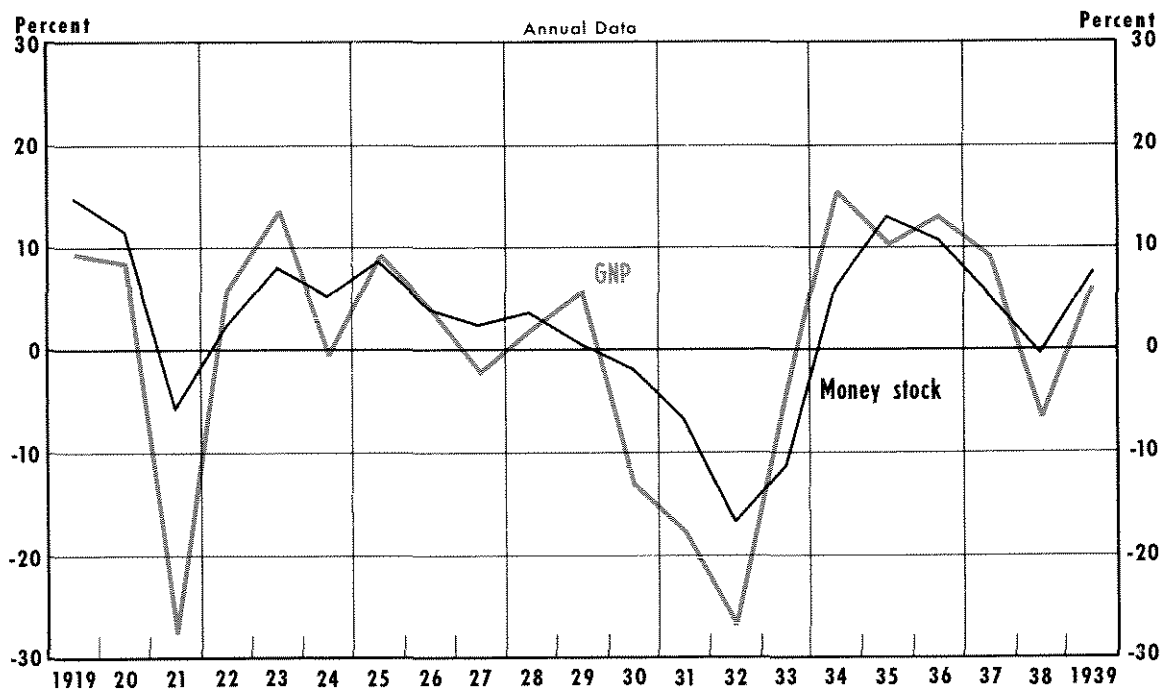
**Short-Term Interest Rates**

Chart 8

**Changes in Gross National Product and the Money Stock**

all privately issued debt or slowed the growth of total output. Evidence from the 1920s, a period of similar crisis in the farm sector, indicates that the farm financial crisis of that decade also had no adverse effects on the interest rates on privately issued debt or on overall economic growth. If we want to rationalize government support for farmers with high debt-to-assets ratios, such support should be sought on other grounds.

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